

# Estrogen Receptor $\beta$ Antibody



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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	H M R Mk	Endogenous	52, 55, 63	Rabbit	#Q92731	2100

## Product Usage Information

### Application

Western Blotting

### Dilution

1:1000

## Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100  $\mu$ g/ml BSA and 50% glycerol. Store at -20°C. Do not aliquot the antibody.

## Specificity/Sensitivity

Estrogen Receptor  $\beta$  Antibody detects endogenous levels of total Estrogen Receptor  $\beta$  protein. This antibody is predicted to cross-react with all Estrogen Receptor  $\beta$  isoforms. This antibody does not cross-react with Estrogen Receptor  $\alpha$ .

## Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues near the amino terminus of human Estrogen Receptor  $\beta$ 1 protein. Antibodies are purified by protein A and peptide affinity chromatography.

## Background

Estrogen Receptor  $\beta$  (ER  $\beta$ ) is a member of the nuclear receptor superfamily of transcription factors and was discovered to be encoded by a gene (*ESR2*) distinct from that encoding Estrogen Receptor  $\alpha$  (ER  $\alpha$ ) (1,2). While studies have revealed that alternative splicing generates multiple isoforms of ER  $\beta$  that differ at their respective C-termini and in tissue distribution, ER  $\beta$ 1 is believed to be the longest and only fully functional isoform (3,4). Indeed, it has been reported that shorter isoforms of ER  $\beta$  (ER  $\beta$ 2,  $\beta$ 4, and  $\beta$ 5) can heterodimerize with ER  $\beta$ 1 and enhance its transcriptional activity in an estradiol-dependent manner (4). ER  $\beta$  is expressed in a wide range of normal and malignant tissues, many of which coexpress ER  $\alpha$ . It is proposed that ER  $\beta$  has an antiproliferative role, perhaps through heterodimerization with ER  $\alpha$  and repression of its transcriptional activity at estrogen response elements (5,6). Recent studies have revealed that expression of *ESR2* is subject to epigenetic regulation and that loss of ER  $\beta$  expression positively contributes to epithelial-mesenchymal transition and enhanced invasiveness in prostate cancer (7,8). ER  $\beta$  has also been found to be negatively regulated at the posttranslational level through phosphorylation of its AF-1 domain, which promotes its ubiquitin-dependent proteasomal degradation (9,10).

## Background References

1. Evans, R.M. (1988) *Science* 240, 889-95.
2. Kuiper, G.G. et al. (1996) *Proc Natl Acad Sci U S A* 93, 5925-30.
3. Moore, J.T. et al. (1998) *Biochem Biophys Res Commun* 247, 75-8.
4. Leung, Y.K. et al. (2006) *Proc Natl Acad Sci U S A* 103, 13162-7.
5. Hall, J.M. and McDonnell, D.P. (1999) *Endocrinology* 140, 5566-78.
6. Pettersson, K. et al. (2000) *Oncogene* 19, 4970-8.
7. Zhu, X. et al. (2004) *Am J Pathol* 164, 2003-12.
8. Mak, P. et al. (2010) *Cancer Cell* 17, 319-32.
9. Tateishi, Y. et al. (2006) *Mol Cell Biol* 26, 7966-76.
10. Picard, N. et al. (2008) *Mol Endocrinol* 22, 317-30.

## Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

## Western Blot Buffer

**IMPORTANT:** For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

## Applications Key

**W:** Western Blotting

## Cross-Reactivity Key

**H:** Human **M:** Mouse **R:** Rat **Mk:** Monkey

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